our views carried out. Yet how constantly do we miss opportunities of furthering this educational process. Each of us, in our own district, could do much useful work by attention to our annual reports, those rather miserable productions so seldom indicative of zeal and enterprise.

What is now most wanted is enterprise. How is this to be shown? By an honest and vigorous effort to face the difficulties and shortcomings which exist in every department of asylum work. Guided by our experience, we know full well about them, though we may not attach quite the same importance to each of them; neither is it possible for any one man to grapple with them all at once. Therefore each of us must be content at first to struggle with what appears to him most urgent; his experience will speedily be tested by his fellows, and genuine improvements will not be slow of being adopted. To go fully into this subject would involve the discussion of the whole of asylum management; that is out of the question.

When I sat down to prepare this address it was my intention to devote considerable attention to the consideration of how best to further scientific work in asylums, but I have already occupied far too much of your time, and will simply say that a most valuable aid to all grades of asylum medical officers would be afforded by the establishment of lectures by men specially learned in the various branches of the science. Such lectures would enable us to keep ourselves quite up to date in the latest discoveries of anatomy, physiology, and pathology of the nervous system. Of this I am quite sure, that were such courses of lectures instituted they would be well attended, yes, even by medical superintendents—men, it is so persistently said by their candid friends, entirely destitute of scientific habits, knowledge, and instincts. Here is a suggestion thrown out in haste, and it probably will be lost sight of, but my honest opinion is that it would be productive of much good if acted on.

But, whatever we do about scientific research, our asylums will be judged by the public by their management, and our first duty as public officers is to make quite certain that we do our very best to perform our work with knowledge and devotion—thus only can we secure public confidence. Let us, therefore, be strong, fearing nothing, living under an ever-present feeling of duty, thoroughly appreciating the sacredness of the work committed to our care, and knowing at the same time that in exact proportion as we succeed in our efforts to attain a high standard of personal, professional, and official honour, so will we gain the confidence and praise of those placed over us, and thus we will not only benefit ourselves, but we will maintain this special branch of medicine in high esteem and prove that it is worthy of engaging the services of the most learned, able, and devoted men in our profession.

SUCCESSFUL VACCINATION.—Mr. J. Nicholls Lewis, of Maindee, has been awarded the Government grant for successful vaccination in the Christchurch and Nash districts of the Newport Union, Mon.

THE PASTEUR INSTITUTE.—The returns published by the *Annales de l'Institut Pasteur* for the two months of May and June show that 305 persons were under treatment during that period, of whom all but 14 were French. It is worth noting that 3 deaths were reported during that period as having occurred in patients who had previously been under treatment. The first case was bitten on March 15th, and came under treatment at the Pasteur Institute on the 17th; the second was bitten on May 3rd, and was treated from the 4th to the 18th; the third case was bitten on May 12th, and treated on the 15th. In none of these cases was there any inordinate delay in undergoing treatment.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently passed away are Professor F. Weber, Ritter von Ebenhof, formerly head of the obstetrical clinic in the University of Prague, aged 79; Dr. Zoilo Perez, of Madrid, several times a member of the Spanish Cortes; Dr. James J. Levick, sometime physician to the Pennsylvania Hospital, aged 68; Dr. A. Kalischer, a leading physician of Berlin, and author of numerous pnblications on children's diseases in Prussia, the prevention of infectious diseases, etc.; and Dr. Francisco Alberto de Oliveira, surgeon to the S. José Hospital, Lisbon.

SIXTY-FIRST ANNUAL MEETING
OF THE
BRITISH MEDICAL ASSOCIATION

Held in NEWCASTLE-ON-TYNE August 1st, 2nd, 3rd, and 4th, 1893.

PROCEEDINGS OF SECTIONS.

PUBLIC MEDICINE.

WEDNESDAY, THURSDAY, FRIDAY, AUGUST 2ND, 3RD, 4TH.
H. E. ARMSTRONG, D.Hy., President.

DISCUSSION ON CHOLERA.

CHOLERA PRECAUTIONS IN THE NORTH OF ENGLAND.

THE PRESIDENT opened the proceedings of the Section by reading an address on cholera precautions in the North of England. He said, in arranging the subjects for the consideration of the Section of Public Medicine, it was at first proposed to give in one paper a description of the preparations made in and around Newcastle to meet the generally anticipated second outburst of cholera during the forthcoming autumn. The undesirability, not to say the impracticability, of such an idea had, however, soon became evident. Others had undertaken portions of the subject with which they were well able to deal, and he trusted that the discussion would be joined in by the representatives, professional or otherwise, of the various sanitary authorities there present. The result of this Conference would be to show that the North was alive to the danger to England of the introduction of the disease from abroad, and that the north-eastern ports, especially in this respect, fully realised the serious responsibility of their position with regard to the whole country. Some idea of the magnitude of this responsibility, he continued, may be gathered from the following statistics, extracted from a special return of information laid before the Conference of Port Sanitary Authorities, held in the Guildhall, London, under the presidency of the Lord Mayor, in February last. In the five ports of Hartlepool, Hull, Sunderland, the Tees, and the Tyne, the arrivals during 1892 of vessels in the foreign trade was 10,651; vessels from infected ports entered those ports bearing an aggregate of 161,560 crews, and 79,334 passengers. The expression of opinion at the Dresden Conference that we are not to have a reappearance of cholera in Europe this autumn may be in some degree to blame for the failure on the part of certain sanitary authorities to make preparations. The grounds on which that opinion was formed are not apparent. Even if it were otherwise, the policy of promulgating such a view is to be condemned as likely to produce only one effect—namely, that of lulling suspicion at a time when suspicion is needed. Since that forecast was made, the disease has not only appeared on the west coast of the Continent of Europe, but has been carried thence to our shores. It behoves us, therefore, above all things to beware of the feeling of security which may be false. That this feeling is not participated in by the north-eastern ports and towns of England will, I think, appear from the evidence to be laid to-day before this Section of the Association. So far as my own immediate experience enables me to speak, the measures taken by the authorities, or with their concurrence, are of two kinds: first, those for the exclusion of cholera; and, secondly, those for the limitation and extinction of any case of the disease that may pass the first line of defence.

THE EXCLUSION OF CHOLERA.

Under the first head come the provisions, general and special, made by port sanitary authorities. On the Tyne these include, first, the health department in ordinary, namely, the medical officer and assistant medical officer of health; the inspector of nuisances and two assistants; a steam launch, and requisite crew for visiting vessels; attending to the general sanitary work of the port, and removal of patients from ship to hospital; an office at the Town Hall, Newcastle; a station, with residence for the inspector, at South Shields, overlooking the port; a hospital of thirty beds in three blocks, on a platform supported by pontoons (of which a model was shown), together with an administrative de-

partment on a separate float, with residence for the hospital staff, disinfecting appliances, etc. These different divisions of the health department as thus constituted are in telephonic communication with each other. The special provisions in the Tyne port during the cholera epidemic in Europe last autumn included the engagement of two assistant medical inspectors to visit ships from infected ports as they arrived, by day or night. To facilitate this work, an arrangement was made, through the courtesy of the officers of Her Majesty's Customs, by which the medical inspectors were accommodated at the Customs hailing station, and were put on board ships by the Customs launch. The crew of the launch of the port sanitary authority was also strengthened to enable her to be in constant attendance. This year the arrangements, although as yet in some respects only provisional, have been considerably extended. Thus two boarding medical officers, Drs. F. W. Clark and W. R. Foster, have been retained to act on immediate notice if required. A twin screw steam launch, *The Spark*, has been engaged, and is in constant readiness for their special purposes, thus leaving the authority's launch *Midge* available for ordinary work. A hulk, with two men to attend her, has been secured, and is about to be fitted up with a complete set of apparatus for disinfecting ships and their contents throughout. This outfit comprises the appliances approved by the Conference of Port Medical Officers of Health,[1] with certain modifications, namely: (1) The hulk will be towed to the side of any ship to be disinfected, thus saving time and obviating a certain degree of danger; (2) instead of a generator of sulphurous acid gas, with driving fans, etc., there will be provided a stock of cylinders of sulphur dioxide or chlorine, liquefied under pressure, and thus ready for use without other apparatus; (3) a steam disinfector; (4) a receptacle for bales of rags and other articles waiting disinfection; (5) a large tank for mercuric drench, with means for flushing or spraying the drench on decks, the floors and sides, etc., of holds, forecastles, berths, dry ballast, into bilges, etc. A steam steriliser will also probably be provided for the treatment of cholera dejecta at the hospital. In inspecting ships we have in the Tyne port a considerable advantage in the constriction of the river near its mouth to the width of about a quarter of a mile, thus giving full view of every vessel arriving by night or by day.

State Contributions to Local Port Expenditure.

Before proceeding to the second part of my subject I beg to direct your attention to the important difference of principle involved in the action of port sanitary authorities for the exclusion of cholera from our shores, and that of urban and rural authorities for its limitation and extinction on land; and consequently the justice of the claim for national support in the former case, but not in the latter. The responsibility of a port sanitary authority in face of an invasion of cholera is by no means the same as that of a group of riparian authorities protecting themselves. Each riparian district will or ought to provide for itself, independently of the action of the port authority. If a port sanitary authority wilfully, or through negligence, fail in its duty of protector—for no matter what may be said to the contrary, that is what is its duty—the Government and the whole country will cry out as against a betrayer; and rightly so, for no one disputes that the exclusion of cholera from Great Britain is under the control of these authorities, or questions the general danger if that control is not exerted with vigilance and energy. But with land authorities it is otherwise. Here each looks out for itself. If the disease is carried from a town elsewhere by infected passengers or articles, the sanitary authority is not answerable. Hence it has no claim for external aid. The opinion expressed by the Chancellor of the Exchequer that ports derive the whole of the advantages from the shipping trade, and ought to take the attendant risks and expenses, is without foundation—for everyone is aware that the entire country benefits by the commercial prosperity of seaports. If the argument of the Chancellor of the Exchequer is valid, why does Government now pay half of the salaries of so many port medical officers of health and inspectors? That the principle of State aid for such purpose of cholera prevention is not new is shown both by the precedent just quoted and by the immense grants made by Parliament under the Contagious Diseases (Animals) Acts for stamping out pleuro-pneumonia, an expenditure the wisdom of which is undoubted. The result of the refusal to comply with the petition of the port sanitary authorities in April last for a grant from the national exchequer to meet the special expense of excluding cholera from Great Britain cannot as yet be seen. One representative on the deputation to the Chancellor of the Exchequer, on hearing his decision, is reported to have said that his authority would make no further provision against the epidemic. That the preparations made by many authorities are, and will be, insufficient to bear the test is abundantly proved by the following summary of returns supplied by the port sanitary authorities of England and Wales for the conference at the Guildhall already referred to. These returns show that of 49 port sanitary districts replying to the queries issued, 3 only had engaged two temporary medical assistants for the purpose of continuous inspection of ships by night and day; 25 have no medical assistant whatever, 8 have permanent assistants only, 10 have temporary assistants only, and 6 only have both permanent and temporary medical assistants; 33 districts report having only 1 inspector, and 1 district had not such an officer at the date of report. As to the means afforded for visiting ships infected or suspected of cholera, in 16 districts only was a special launch or steam tug provided; 12 districts appear to be without any means whatever for this purpose. As to hospital accommodation 11 of the districts have floating hospitals of their own, 29 have similar accommodation on shore, 1 has a floating hospital in conjunction with another sanitary authority, 9 have hospitals on shore in conjunction with other authorities, and 5 districts are without any hospital accommodation. Hospitals on land for cases of cholera on shipboard, or any hospitals for cholera to which patients from other districts, and suffering from other diseases, have access, are unsatisfactory. Speaking generally, the means of removing patients from ship to hospital are insufficient. In 15 districts the conveyance is an open boat or barge, and in 10 others there appears to be no provision at all. Twenty-six districts are without disinfecting apparatus; 14 only have steam apparatus for the purpose. As yet no district seems to have acquired a steam steriliser for treating infected excreta. The Tyne port is, as already stated, about to provide itself with one. The means in general use for disinfecting ships' holds, bilges, ballast tanks, rags in bale, baggage, and other cargo, cannot be characterised as satisfactory. In a large number of districts sulphur burning is the principal process relied on. The much safer and more convenient liquefied sulphur dioxide appears to have come into use in only one or two districts. Perchloride of mercury is but little employed. Judging by the returns, a considerable number of districts are without any means or appliance whatever for the disinfecting of a ship or its contents. Seeing from the foregoing summary how unreliable are our barriers against cholera, and considering the exceptional nature of the British method of dealing with cholera as compared with the quarantine system so much in favour abroad, the refusal of aid to port sanitary authorities is doubly unfortunate—first, by reason of the danger to which the entire country may be exposed through inefficiency on the part of a single port, however small; and, secondly, from the moral effect on other nations of the spectacle of our Government declining to support the system of prevention it has so long, in the face of general opposition, steadfastly and resolutely upheld—in other words, refusing to pay for the lock on the house door.

The Limitation and Extinction of Cholera.

Owing to the time already occupied by this paper on the exclusion of cholera, very little space is left for remarks on limitation and extinction. A few words on this point to show that the authorities have not been unmindful of their responsibility may not, however, be out of place. As Dr. C. U. Laws has undertaken an account of the new Cholera Hospital of the Newcastle Corporation (the administrative block and one ward of which, together with a complete set of apparatus for disinfection, including a somewhat novel form of steriliser for infected excreta, are now completed), any

[1] See report in *Shipping Gazette* of February 18th, 1893.

further reference here to these is unnecessary. Mr. Bernard E. Smith, Alkali Inspector to the Local Government Board, has, at my request, kindly consented to describe some recent improvements in aërial disinfection by means of different gases liquefied under pressure, the production of which in large quantities and at prices calculated to bring them into general use, is now in progress by well known chemical manufacturers on the Tyne. Early in the year the Sanitary Committee of the Newcastle Corporation, in conference with the leading representatives of the Newcastle Dispensary, agreed on a system of organisation for adoption in the event of cholera appearing in the city. This included the division of the city into districts, with a special set of officers, including medical attendants, home nurses, inspectors, disinfectors, etc., for each. Further details of this organisation will be given by Dr. Richardson, Resident Medical Officer of the Dispensary, in the discussion to follow. The police and their telephone system will be utilised for the notification of cases. On receiving the report of a case the medical officer of health will at once despatch an inspector and (unless the report be accompanied by an intimation that the patient is unfit for removal), an ambulance to the house. Cases fit for removal will be taken to hospital, with their infected bedding, clothing, etc., where the latter will be disinfected or burnt in the hospital destructor. Patients unfit for removal will be provided with medical attendance, nursing, and medicines. A large closely-covered red pail, with the word "Cholera" painted on it in white letters, will be left at the house by the corporation. A disinfector will attend to charge this pail with a concentrated solution of perchloride of mercury coloured a deep blue tint and in sufficient quantity to yield a strength of not less than 1 per 1,000 in a pailful of liquid. Printed directions as to the use of this pail will be given to the nurse. The disinfector will call at the house three times a day during the continuance of the case and will see to the proper discharge of the contents of the pail into the drain, the final disinfection of the premises, etc., and other matters requiring his attention. Infected articles of clothing, etc., will be removed from the premises in tightly-closed boxes. It is estimated that the average discharges from a cholera patient amount to about two gallons. Therefore, for 100 cases there would be to deal with 200 gallons (2,000 lbs.), requiring at least 2 lbs. of mercuric perchloride, costing 5s. Six houses will probably be as many as one man can properly attend to per day. The question of the treatment of the sewage of the city in case of an outbreak of cholera has been referred by the Sanitary Committee to the city engineer and medical officer of health, who were authorised to consult Professor Bedson, D.Sc., of the Durham College of Science. The result of this conference was to report in favour of frequent and thorough water flushing of the sewers in preference to any chemical or other mode of sewage treatment. Disinfectants will, of course, be available from the stock of the health department. The various local nursing institutions have been communicated with, and will, as far as lies in their power, provide home nurses for those requiring them. But in the event of any considerable epidemic it is evident that the only reliable source for help is the Royal British Nursing Association. The aid of senior medical students, after suitable training in cholera work, is counted on. In doubtful cases, and as a means of determining the cessation of the period of infectivity in convalescents, the excreta of the patient will be submitted to a bacteriologist for examination. The Sanitary Committee have recommended the Council to provide a reception house for poor persons whose dwellings are being disinfected. At the same time a list will be kept of empty houses suitable for such a purpose. One important duty of the special inspectors will be to act as cholera detectives. The anticipation of any serious epidemic of the disease would, of course, lead to the adoption of the special provisions of the Public Health Act for house-to-house visitation and other purposes. In conclusion, that medical practitioners may not themselves be open to a charge of conveying the contagium, either of cholera, scarlet fever, smallpox, or other disease from house to house, I beg strongly to commend to the profession the use of a wrapper and head cover to be put on in the lobby of the house of any infectious case, and to be taken off on washing the hands, etc., in disinfectant immediately after leaving the sick room. The specimen I exhibit is made of grey gingham, is washable, and occupies very little space. After use it may be placed in a small waterproof bag, such us as shown herewith.

Dr. C. U. LAWS described

THE ARRANGEMENTS FOR STERILISING CHOLERA DEJECTA, ETC., ADOPTED AT THE TEMPORARY CHOLERA HOSPITAL AT NEWCASTLE-ON-TYNE.

The publicity given by the press to all the terrible details of the outbreak of cholera at Hamburg in the summer and autumn of 1891 excited the greatest interest and some wholesome alarm in England, more especially in those seaports, such as the Tyne, which were in direct communication with Hamburg. The port sanitary authorities were at once on the alert, and so effective were the measures taken on the Tyne that, although during the most of the time there was constant communication with Hamburg, and one actual and some suspected cases of cholera reached the port, not one got through the first line of defence, and the only case of death from the disease took place on the floating hospital of the port sanitary authority. The sanitary authority of Newcastle at once resolved to prepare the second line of defence, so as not to be taken unawares should any cases occur in the town during the summers of 1893 or 1894. It was admitted that the sanitary state of the town was very different from that prevailing at the time of the heavy epidemics of 1849 and 1853, and that, in 1866, the disease was much more under control, while, since that time, there had been nothing that could really be called an epidemic of cholera in the town or neighbourhood. It was considered, therefore, that provision for the housing and treatment of 100 or 120 patients would probably meet the requirements of even a sharp visit of the plague. There were some of the necessary preparations that would take time to carry out, while others might be deferred until the disease had actually declared itself again in Hamburg, or some other port in frequent communication with the Tyne. It was evident that no time must be lost in selecting and preparing a suitable site. That finally selected on the Town Moor, though not by any means an ideal site, had a balance of advantages in its favour. Thus, it was one which the freemen (whose consent was necessary) were willing to put at the disposal of the authority on proper conditions. It was far enough removed from the nearest dwellings to avoid private opposition, and it had already some of the essentials required. On the other hand, it was far from the town; it was rather open and exposed, and, more important still, the Town Moor was known to be honeycombed with old coal workings now standing full of water. From these workings it was known that several private and public wells in and around the town derived their supply. It would, therefore, be dangerous if any of the cholera dejecta should find their way on to the soil, as it was quite possible that in such a case the water of wells in the various parts of the town distant a mile or even more might be contaminated with the cholera bacillus, and so become centres of apparently spontaneous outbreaks. This, though a serious disadvantage, was one capable of being dealt with effectually by physical means, and, in fact, it was made the groundwork of the whole scheme of the hospital. It was decided that the first point to be considered was that the drains and sewers should be made quite watertight, and that the whole of the floors should be absolutely impervious and capable of being properly cleansed and swilled, and that all washings of whatever kind should naturally find their way to the sewers. This was accomplished by making the ward floors of concrete, slightly dished towards the centre, and sloping down to one end where there was an opening to the sewer. All liquids which fell on the floor were therefore kept within its bounds, and the washings might either be run at once into the sewer or passed to the steriliser if need be. As the sewers and these concrete floors required time to complete they were the first things to be commenced, being arranged in six blocks, each forming a floor for a wooden building laid out to contain twenty beds. These wooden buildings were made of a framing of rough scantlings, covered without with galvanised corrugated iron, and lined within by a beading of half-inch matchboarding dressed and

varnished. The roofs of the were also covered with galvanised iron. The floor space allowed was 100 square feet per bed. These buildings being such as could be readily and quickly erected, it was not considered necessary that they should be commenced until there was some immediate probability of the disease appearing, and as they could be properly and economically built by contract, the committee took tenders for the erection of them, the chief conditions being that the contractor should undertake to keep on hand a certain stock of the necessary material, and that he should be prepared to erect each ward block complete and ready for patients within twenty-one days of notice being given to him to that effect. Should the contractor not be called on to erect them at all, then he was to receive 10 per cent. of the stipulated price as compensation to him for any loss on the material provided. The beds and other furnishings of the wards were dealt with in the same way—namely, by a contingent contract, to be carried out only if required. It was at first intended that the present small-pox hospital should be used as an "administrative block," and for dormitories for the cholera nurses, but the increase in the number of small-pox cases in the country generally, and the fact that there were several in Newcastle and the neighbourhood, rendered this plan impracticable, and now a separate block for the accommodation of seventeen nurses and the necessary domestic staff had been erected and furnished.

The Need for Disinfection of Dejecta.

During the discussions on the scheme it became evident that the general feeling was in favour of some effectual means for the disinfection of the dejecta and liquid sewage generally, before they were allowed to reach the sewers, and also that some form of destruction by fire was most popular. The whole question was referred to the medical officer of health and the city engineer to consider and report upon, with power to consult such experts as they considered could help them in the matter. They were also to consider some scheme for the disinfection of the cholera dejecta in private houses, should the disease break out so generally as to make it necessary to treat patients at their own homes. These gentlemen made a report on both these matters, having had the advantage of consulting Professor Bedson, of the Durham College of Science, on the question of the best disinfectants, and the best modes of applying them. This report was adopted by the authority, and its recommendations carried out.

Sterilisation by Steam.

For the hospital they advised the use of a modification of the system of sterilisation by steam, carried out in the Russian and Berlin hospitals. There the dejecta, washings, etc., were collected from the wards by a rather complicated system of pipes, and conveyed to a central sterilising boiler, where they were raised to a temperature of 230° by means of steam passing round the jacketted boiler, which was furnished with an elaborate system of gauges for both pressure and temperature. After the whole of the material had been thus practically boiled under pressure it was allowed to flow away into the sewer. The modification suggested by the medical officer of health and the city engineer was to avoid the collection of the material by means of pipes, which, never being heated, would contain unsterilised matter, and might be a source of danger. They, therefore, proposed to reduce greatly the size of the sterilising pan—namely, from 200 or 300 gallons down to 30, and to place one of them in connection with each ward, conveying the steam to it from a central boiler detached from the wards. The sterilising pan is furnished with an opening 9 inches in diameter, which can be hermetically closed by an iron lid, with an indiarubber joint ring. Into this pan the steam is conveyed by a pipe reaching quite to the bottom and pierced by small holes. From the bottom of the pan a large cast-iron pipe, capable of being closed by a valve, communicates with a cooling tank outside the ward, this tank being directly connected with the sewer. The pan stands in a small offshoot from the ward, and while not in use, steam is shut off and the hinged lid is thrown back, leaving the opening free; into this the nurse empties the bedpans, or any vessels containing infected washings or suspected liquid, and closes the lid. When the pan is about two-thirds full, or oftener, if necessary, she calls the attendant, who screws the lid down tightly, closes the outlet valve, and opens the steam cock; the steam enters at the bottom of the liquid, and rapidly raises it to a temperature of 250°, which is indicated by the steam gauge showing a pressure of 30 lbs. As soon as this point is reached it shows that the desired temperature has been obtained throughout the liquid, and that it is now effectually sterilised. Steam is shut off, and when the gauge indicates that the pressure has fallen to about 5 lbs., the outlet valve is opened, and the whole of the liquid is at once discharged into the cooling tank by the pressure of the remaining steam, the pan being completely emptied. In the tank it meets with a stream of cold water, and as soon as the whole is cooled down to 100° it is allowed to flow away to the sewers. In the meantime, the lid being released, the sterilising pan is thrown open again, ready for use by the nurse. The whole operation does not occupy more than fifteen to twenty minutes, so that, in case of necessity, a charge can be boiled off and cleared out each half hour, thus providing for the sterilisation of from 200 to 250 gallons daily from each ward, which seems ample to meet the requirements of twenty patients. By this mode of working the material is rendered harmless before any part of it leaves the ward, and no unsterilised matter is left in any of the pipes. Messrs. Goddard, Massey, and Warner, of Nottingham, worked out the details, and made the machinery for the Newcastle Hospital. Besides this sterilising apparatus, there was provided at the hospital, a small steam disinfector for clothing, bedding, and the like, and also a small hospital destructor for the burning of solid matter.

Disinfectants.

The result of the consultation with Dr. Bedson, as to the best disinfectants for use in private houses where cholera had broken out, was that he generally approved of the proposed arrangements for dealing with the dejecta, etc., in such cases, while giving some valuable advice as to the form in which the chemicals used should be applied. The proposals were that the authority should undertake the carrying out of this work, and the provision of the needful apparatus and disinfectants, and should employ a staff of men working under the medical officer of health and his inspectors to see that the work was properly done. The plan suggested was that as soon as a case was reported, a special pail, marked "cholera pail," and painted red or some other distinctive colour, should be at once taken up to the house. Into this pail, before he left, the medical officer's man would pour a strong solution of mercury perchloride sufficient to make the pail when full of liquid contain 1 per 1,000 of the disinfectant, that is, for a 5-gallon pail the amount of perchloride would be about three-quarters of an ounce. The solution would be supplied to the inspectors in bottles containing enough for one, two, or three charges, as might be most convenient, so that there might be no doubt as to the quantity used. Directions would be given to the nurses, or other persons in charge of the patients, that all dejecta and washings of whatever kind should be at once emptied into the "cholera pail," and into the pail only, and well stirred to mix them thoroughly with the disinfectant. The sub-inspector who supplied the pail would visit the house three times, at least, during each day, and at each visit would see that the directions had been complied with. He would then empty the pail into the drains and recharge it with the disinfectant. Should there be more than one patient in the house, additional pails would be supplied or the house visited oftener. This plan should secure that, except by wilful negligence, no dejecta or washings could reach the sewers until rendered harmless, and was simple enough to give no excuse for evading it.

The Duties and Difficulties of Port Medical Inspectors.

Dr. Francis W. Clark, D.P.H.Camb., said that it had been his duty and his privilege to act as boarding medical officer for the River Tyne Port Sanitary Authority during the recent cholera epidemic. The duties, briefly, were to board every vessel entering an English port from a cholera-infected port, whether of our own or another country. This necessitated, of course, a periodical return, from some official source, of those ports which were deemed infected, and this return

had been regularly received from the offices of the Port of London. On boarding such a vessel, the duty of the medical inspector was to examine every person on board in a manner sufficient to enable him to declare whether or not the ship was infected with cholera; and, should such prove to be the case, he must certify accordingly in duplicate form, one copy of the certificate being handed to the master of the vessel, and the other copy retained, or forwarded to the sanitary authority, while notice was also sent to the Local Government Board as to the arrival of the vessel, and the presence on board of cholera. The number of persons seen must be carefully compared with the number of the ship's company, as entered in the ship's articles at the port of sailing, and especial inquiry must be directed to suspicious cases of diarrhœa, mention of which, unless specially inquired into, was frequently suppressed. If the medical officer were satisfied that the ship was infected with cholera, he should next direct the master to moor or anchor the vessel at the quarantine station approved of by the chief officer of Customs of the port, and should then make a further examination of all persons on board the ship, certifying each suspicious or declared case of cholera, and notifying in writing to the master that no person not so certified should be permitted to land unless he satisfy the medical officer of health as to his name, place of destination, and address at such place. The names and addresses of any persons so desirous of landing were forwarded immediately to the clerk of the sanitary authority, who might, if he thought fit, verify the accuracy of the said addresses before these persons were allowed to leave the ship. Should the boarding medical officer find that the ship was not infected with cholera. but that she had passengers on board in a filthy or otherwise unwholesome condition, or that she had come from a place infected with cholera, he might yet give the above certificate in duplicate form, if, in his opinion, it would tend to check the introduction or spread of cholera, prohibiting the landing of any person on board until he was satisfied as to their name, place of destination, and address at such place. Every person certified by the medical officer to be suffering from cholera should be removed, if his condition admitted of it, to some hospital or other suitable place appointed for that purpose by the sanitary authority; but if such person could not be so removed the ship remained subject to the control of the medical officer, and all suspicious cases might be detained on board the ship for a period not exceeding two days, or might be removed to the hospital or other suitable place and detained there for a like period. If any death from cholera occurred on board such ship the sanitary authority might themselves inter the body or direct the master to cause the body to be taken out to sea and committed to the deep, properly loaded to prevent it rising. All articles of clothing, bedding, etc., soiled with cholera discharges, would be destroyed by the master's directions, or disinfected if thought advisable by the medical officer. The ship, also, would be disinfected under the directions of the medical officer.

THE NEED FOR POWER OF DETENTION.

These were the duties of port medical officers of health, as defined by the special cholera regulations of the Local Government Board; and the first difficulty met with in carrying out these regulations was dependent upon the entire absence of any powers of detention on the part of the Port Sanitary Authority, pending the inspection of the vessel by the medical officer. In the Tyne it frequently happened that three or four vessels from cholera-infected ports arrived at about the same time; and while the boarding medical officer was occupied on board one of them, the others would proceed up the river, or especially at flood tide, would enter the docks, and persons would land, before any medical inspection could be carried out. A brief period of detention, limited, say, to one, two, or three hours, would amply suffice to obviate this difficulty; and although offering occasionally some slight hindrance to commerce, need only be put in force when several vessels from infected ports arrived simultaneously, while the additional security gained by the prevention of the landing of persons suffering from slight and suspicious attacks of choleraic diarrhœa, or even convalescent from an acute attack of cholera, would amply repay the country for this trivial hindrance to its traffic. Should such power of detention be granted, vessels would be required to moor at some appointed station until the completion of the medical inspection, and in a narrow river like the Tyne this would be an additional advantage, for on several occasions on which the master of a vessel had been sufficiently conscientious to await his arrival if he were detained elsewhere, he had complained of the risk of doing damage to other craft in the river and the risk to his own vessel entailed by waiting unmoored—and, in fact, on one or two occasions damage had been done in such manner.

CONTROL OF CREWS.

Another difficulty which had been met with in carrying out the above regulations was that many of the regular trading vessels remained for some twenty-four or forty-eight hours only, and the crew had no homes and no address which they could give, but desired to go ashore to purchase provisions for the next passage. These men were allowed to land, provided they slept on board the vessel; but there was no remedy if these men deserted when ashore, as they occasionally did. Any attempt to detain the men on board would be futile, while the vessel was alongside the quay or the coaling spouts. As, however, these men did not, as a rule, travel very far when ashore, the keepers of all boarding-houses and sailors' homes at ports should be made liable, under a penalty, to report at once all suspicious cases of illness, and especially of diarrhœa, vomiting, or cramps, among the inmates, to the sanitary officials of that town. Under these circumstances, the health authorities could at once deal with suspicious cases of cholera, and isolate them, before the disease had had any opportunity of spreading. The Port Sanitary Authority should also be apprised of such cases, in order that a stricter watch might be kept over the remainder of the crew of the vessel which the sick man had left. Occasionally a vessel entered the port, the master of which was unaware, until he communicated with his owner or agent, whether the men would be paid off and the vessel laid up, or proceed to sea again in a few days. Under these circumstances it was found advisable to take the names and addresses of all the crew, and retain the list until the master had had an opportunity of communicating with his owners. The master was instructed to at once notify to the Port Sanitary Authority the result of his communications from the owners, and, if the vessel was to be paid off, the list of names and addresses was at once forwarded to the clerk to the authority; while if the vessel was to proceed to sea again, a second visit to her was necessary, to ascertain which of the crew were leaving the ship, in order that their names and addresses alone might be dealt with.

BALLAST.

Powers ought to be granted to the port inspectors to order the pumping out of water ballast which had been obtained from the river or dock of an infected port, and the same powers should apply to sand ballast if dredged from the bed of an infected river. Last autumn a number of sailing vessels entered the Tyne in ballast, which had been dredged from the bottom of the river Elbe, just below Hamburg, and it would appear that such ballast, under the circumstances, must certainly have contained some of the cholera poison. This ballast was disinfected under the superintendence of the port medical officers, and then sent to sea and sunk in deep water by the river Tyne commissioners' screw hoppers. In order to facilitate commerce and save time, fresh water ballast might be pumped out at sea shortly before the vessel reached her destination—and, in fact, this was done last year by the regular Tyne traders, for in those vessels which must have some ballast to keep them steady one ballast tank was emptied of its fresh water and then the sea-cock opened, so that it was filled with sea water before the next tank was emptied. As a rule these vessels have three or more separate water ballast tanks. If the British Consuls at infected ports were instructed to inform all masters of vessels who applied to them for information that no fresh water ballast from an infected port might be brought into a British port, it would soon become a regular custom for those vessels trading from a cholera-infected port to dispose of their fresh water ballast at sea, and, if necessary, take

in sea water ballast in place of it. The disinfection of bilges and waterclosets and the renewal of the drinking water when its appearance was not satisfactory were regularly dealt with by the staff of sanitary inspectors acting under the directions of the medical officers, and merely called for extra vigilance during the prevalence of cholera or other epidemics.

Quarantine as a Preventive Measure against Cholera.

Dr. J. Wright Mason, D.P.H.Aberd. (M.O.H. Town and Port of Hull), observed that quarantine as a preventive measure against the introduction of cholera into this country had been superseded by the system known as medical inspection, which received the formal approval of the Vienna Conference in 1874. Any attempt had long since been relinquished in this country to impose quarantine at any of our ports, and the only relic of the system was the Quarantine Act of 1825, which still existed but was never enforced except in cases of yellow fever. In Liverpool there was still an officer specially appointed by Her Majesty's Customs to carry out the provisions of this Act. Quarantine would mean the detention of all vessels coming from infected ports for a period varying from five to ten days, according to the conclusions arrived at at the conferences held in Vienna (1874) and Rome (1885). At the conference previously held at Constantinople in 1866 a period of sixteen days' quarantine was decided upon. The conclusions of the Dresden Conference had not yet been published, but he hoped that one result would be the international notification of disease. The incubation period of cholera was about five days, but the "Solomono" case at Bridgwater in September last extended considerably over this period. The delay to travellers, often unexpected and indefinite, their detention under circumstances most favourable to contract disease; and, secondly, the dislocation of commerce, together with the accumulated evidence of those who have had to bear the brunt of public criticism in this country, had demonstrated beyond doubt that the theory of quarantine was delusive, and should be abandoned. The country does not depend upon the false security of quarantine, but rather upon its sanitary administration, and each district should be in such a sanitary state of preparedness that the disease, if imported, should not spread. The experience of 1892, during the cholera epidemic at Hamburg, in those ports which were exposed, and possibly none more so than the ports of Hull and Newcastle, which were in daily communication with that cholera-stricken city, must have inspired confidence in the public mind in this country and the Continent of Europe, that medical inspection, the due regard to the rigorous inspection of all articles likely to convey infection, improved sanitation, and efficient hospital equipment, were alone sufficient to arrest the progress of the disease. Quarantine had been proved a failure, and only served the purpose of diverting attention from the real protection. If cholera could be controlled by the system known as medical inspection, with due regard to sanitation, the same regulations might equally apply to vessels infected with yellow fever, and with the same beneficial results, and would be more likely to prevent the disease than the detention of the healthy and sick together in quarantine. Medical inspection in lieu of quarantine had been adopted in England over a quarter of a century, and involved no vexatious interference, but provided for the inspection of vessels on arrival, and should cholera have developed during the voyage amongst any of the passengers or crew the removal of patients to hospital and the isolation of suspicious cases. Healthy persons were allowed to land subject to the notification of their place of destination, the vessel being only detained for purposes of disinfection at some appointed station, or in case a patient was in too dangerous a condition to be removed to hospital. The regulations of the Local Government Board also provided where a ship was not infected with cholera, or had come from a place infected with cholera, for the detention on board the vessel of such persons who were in an unwholesome or destitute condition. The drinking water taken in at any infected port might be ordered to be thrown overboard, and the tanks cleansed upon a proper supply being furnished in lieu thereof by the authority, and the bilges pumped out and thoroughly disinfected before the vessel was allowed to enter the dock. Medical inspection to be efficient should be carried out both by day and night, and all vessels, both foreign and coastwise, arriving from infected ports, before being allowed entrance to the port, should be detained for the purpose of medical inspection, and should receive a certificate from the medical officer of health or some other person deputed that the passengers and crew on board were healthy. We are not yet perfect, and much remains to strengthen our natural defences against the invasion of cholera. The ports, whilst protecting themselves, were protecting the community at large, and he believed that he was expressing the opinion of port sanitary authorities generally that the expenses incurred for these extra precautions, which were necessary for efficient port sanitary administration, should be contributed to in some measure by the Imperial Exchequer.

Brigade-Surgeon R. Pringle, M.D. (late Sanitary Department H.M.'s Bengal Army) observed that land quarantine was so impossible to carry out satisfactorily that it did not even merit a discussion. While no believer in the directly infectious or contagious theory of cholera, he laid particular stress on the importance of special arrangements for the treatment and isolation of cases of the disease occurring, for instance, in the carriages in long railway journeys. Quarantine at seaports was another thing; a ship arriving at a port with cases of cholera on board ought to undergo a most careful inspection, isolation, and disinfection while anchored in a selected locality before it could be admitted into port. A distinction must be made between the regulations enforced in the case of large seaports like Newcastle, etc., and passenger traffic seaports like Dover, etc. In the former case the length of time that the ship had been at sea must be taken into consideration in all calculations of the period of quarantine isolation. The case of ports like Dover, used for passenger traffic and confined to short channel passages, required special regulations. A system of registration of names and addresses of passengers, with special facilities for communicating the fact of these cases occurring to some central authority in the county or group of counties, was needed. The chief local conditions for the lighting up of an alarming outbreak were (1) defective water supply, directly aiding in circulating the cholera poison in suspension, as in Hamburg; (2) local insanitation, producing diarrhœa or even dysentery; and (3) an abundant supply of fruit or vegetables in a state likely to cause the production of diarrhœa, or that class of vegetables producing inordinate looseness of the bowels, such as melons, etc., which, as he had pointed out in the cases of Juggernauth and Cashmere, unquestionably gave rise to conditions favouring the susceptibility to the disease as well as aiding in its rapid development and dissemination. The state of humidity of the air, and indirectly the soil, were also of importance. The first condition Dr. Pringle called A, the second B, and the third C, including personal, local, and atmospheric. A and B were conditions this country had spent millions to place in an innocuous condition as far as this was possible, and Britain, therefore, could, humanly speaking, contemplate the condition C without alarm, feeling confident that, unless the conditions of A and B were favourable for the reception of the cholera poison, cholera, except to the extent of a few sporadic cases, was impossible. Speaking from his extensive experience of the disease in India during two twelfth-year festivals at Hardwár, on the Ganges, in the North-West Provinces, in 1867 and 1879, and Juggernauth on the Bay of Bengal in 1856, Dr. Pringle stated that Hardwár was one of the impossibilities of severe epidemic cholera prevention, and that persistence in these festivals, after the awful lessons of 1867 and 1879, and even so late as 1892, was a positive trifling with insanitary conditions, alone excusable on the grounds of the grossest ignorance of the risks incurred. As an instance of possibilities, Dr. Pringle named Muthura, on the Jumna, North-West Provinces. Here all that individual liberality on the part of the native gentlemen could do to improve conditions A and B had resulted in giving to the authorities of India for twenty years, from 1864, while the district was under his sanitary supervision, an object lesson, even in that land of endemic cholera, of how possible it was to protect a crowded and populous native city, the centre of pilgrim resort from all parts of India, at all

times of the year, from epidemic cholera, though this immunity had been repeatedly tested with the crowds of cholera-stricken hurrying from Hardwár. Muthura showed what could be done, Hardwár what might be left undone, and Murree in the Himalayas what should be done to protect localities from cholera epidemics. Up to 1884 at least, as he knew, sanitary cordons were universal in the North-West Provinces round military and civil stations during cholera outbreaks, and in every case they proved complete failures. The dead and the dying were in 1879 taken out of railway carriages at Saharanpur, one of the most important railway stations in the North-West Provinces, and the train allowed to proceed without any attempt at proper purification or disinfection. The only well at this railway station was fouled with "lotatis" (brass drinking cups), covered with the unutterable impurities inseparable from a cholera outbreak among terror-stricken natives waiting at a railway station, and all this in a country boasting of a Sanitary Department. Though this outbreak was the cause of a loss of over 600 soldiers among the troops engaged in the Afghan campaign, the wonder is that it was not 6,000, and that march known as "the march of death." To complete this picture of complete demoralisation, Brigade-Surgeon Pringle gave the details of a case of a British soldier struck down by the pestilence in passing through Saharanpur, and placed in the "dhooly," or stretcher, with the pick-axe and spade, to be buried when the column halted, but who was found sitting up when the burying party came up to the "dhooly." As regards the period for quarantine, in the cases in which this preventive measure was applicable Dr. Pringle fixed it at forty-eight hours, as follows: Out of all the cases observed during twenty years, not a single one was met with in Mussooree and Landour in the Himalayas (after full exposure to the cholera poison in the plains below), in which that limit exceeded.

The Birthplace and Diffusion of Cholera.

Mr. Ernest Hart made a communication on the birthplaces and diffusion of cholera, in which he traced especially the influence of great assemblies of pilgrims and traffickers such as took place in India at certain localities on religious festivals, and annually at Mecca. His remarks were illustrated by photographs of scenes during a religious fair in India, showing the pilgrims bathing, washing, and drinking. He concluded by moving the following resolution:

Resolution I.

"That it be referred to the Parliamentary Bills Committee to take such steps as may be desirable to approach the British and foreign Governments with a view to obtain their intervention in securing measures for the suppression of cholera at the Hardwár and other Indian fairs, and at the Meccan pilgrimage; and that for this purpose also due submission of the facts be made to His Majesty the Sultan."

Dr. Alfred Hill (M.O.H. Birmingham) in rising to second Mr. Ernest Hart's resolution, paid a high tribute to the great interest and value of Mr. Hart's address. Mr. Hart possessed in an eminent degree the faculty of an expositor. He had shown it years ago in his admirable little brochure, *The Truth about Vaccination;* he had repeated the performance on the present occasion in expounding in the clearest and most informing manner the truth about cholera. The subject had been made wonderfully clear and comprehensible, and he had put the whole matter into a nutshell. He had thoroughly impressed the mind with the facts that cholera was not infectious in the ordinary sense, that we now know the origin and character of the disease, and that therefore we are able to a great extent to prevent it, while curative measures are useless. All this went to show the increasing value of the preventive department of medicine, confirmed also by the result of its influence on other diseases like ague, small-pox, and typhoid. It appeared to be rapidly becoming more important than the curative branch. The resolution was adopted unanimously.

Resolution II.

The following resolution was moved by the President (Dr. H. E. Armstrong), seconded by Dr. Spottiswoode Cameron (M.O.H. Leeds), and carried unanimously: "That the Parliamentary Bills Committee of the British Medical Association be requested to bring before the Local Government Board the desirability of taking means, by extending the jurisdiction of the port sanitary authorities, or otherwise, to safeguard the island against the danger of persons infected with cholera being landed at any point not under the control of a port authority."

Resolution III.

The following resolution was moved by Sir Charles Cameron (M.O.H. Dublin): "That it is the opinion of the Public Health Section that the extra expenses incurred by the port sanitary authorities in preparing for or dealing with an invasion of Asiatic cholera should be defrayed by the country at large." The resolution was seconded by Brigade-Surgeon Robert Pringle, M.D., and carried unanimously.

Dr. Thresh (M.O.H. Essex) expressed the opinion that our first line of defence was not perfect, inasmuch as on many parts of the coast not included in port sanitary districts persons from infected countries or ships could be landed without the medical officer for the district becoming acquainted with the fact. In such districts, moreover, usually no preparation has been made for the isolation and treatment of cases should they occur.

Dr. Groves (M.O.H. Isle of Wight) concurred with the opinion expressed as to the weak points in our first line of defence against cholera. He gave an example of a pilot landing from a vessel from Hamburg on the coast of the district of which he had charge without any person being aware of his presence. Subsequently other persons landed on remote spots of the sixty miles of coast. The coastguard officers were important aids, but, with all their vigilance, smuggling occurred, and, as a matter of fact, landed every day without any investigation on the part of the coastguardsmen.

Dr. Ogilvie Grant (M.O.H. County of Inverness) observed that the defects of our first line of defence against cholera—namely, the proper inspection of the seaboard—had been pointed out; but he desired to point out that what might be called the second line of defence—the early notification of this disease and of choleraic diarrhœa—could only be given effect to by the adoption of the Compulsory Notification of Infectious Diseases Act. Until this was done by all local authorities sanitary officials would experience difficulty in getting early and accurate information. He had personally found considerable difficulty in getting local authorities to take steps to erect hospitals and complete the third line of defence—an experience which was probably by no means unique.

Sir C. Cameron had had experience of cholera in Dublin in 1866. There were 950 deaths and about 1,500 cases reported. He believed that the cases of true cholera almost always proved fatal. Many cases of severe diarrhœa and of so-called "British cholera" would, of course, be coexistent with Asiatic cholera, and, as of these 95 per cent. would recover, the recoveries would be recorded as referring to true cholera.

Dr. Sidney Davies said that although sanitary measures are by far the most important in preventing cholera, quarantine was not altogether to be despised. It appeared to have kept cholera for nine years out of Egypt, for the fact that there had been no cases of cholera in Egypt during that time could only be attributed to the measures taken by the Egyptian Quarantine Board. In order to trace passengers to their homes from infected ships it was necessary that the addresses should first be verified before they left their ship.

Dr. Spottiswoode Cameron (M.O.H. of Leeds) wished only to mention two points which had come up in the discussion. Our first line of defence was even yet not quite perfect. In Leeds information was frequently received from Dr. Armstrong, from Dr. Mason of Hull, from Dr. Collingridge of London, of the landing of persons from infected ports, and their intention to go to Leeds. Frequently these persons were not to be found in Leeds: not always because the address was wrong. In one case, for instance, the sanitary officers visited daily for nearly a week, and the person did not arrive, nor did his wife know where he was. Now in this case there was no intention to deceive. The man had simply, instead of coming home to the address given, gone about his business as a traveller. Had he developed cholera

in some inland town no one would have been on the look-out for his case. In other cases, especially of foreign immigrants, the names and addresses received in Leeds were often quite wrong. The other point was that both Mr. Ernest Hart and Dr. Alfred Hill stated broadly that in cholera treatment was of no use. Neither meant that all treatment was useless in cholera, and the expressions used had been, perhaps, too general. If it was meant that drugs did not cut short an attack of cholera any more than they did an attack of measles and scarlet fever, that would be admitted by all; but if it were meant that a patient unnursed and untended, attacked by cholera, had exactly the same chance of recovery as a person carefully treated at home or in hospital, that was misleading.

Brigade-Surgeon R. Pringle, M.D., had listened with special interest to the graphic story told by Mr. Ernest Hart of the marches of cholera from Hardwár and Mecca; the photographs of Hardwár had brought back to him his annual visits to that sacred spot, extending over twenty years, from 1864. On hearing what had been done in 1891, he had felt that now would come the reward to those who, like himself, have felt that cholera-polluted water, as at the well at Hardwár, and at the only well at the railway station at Saharanpur, was not the harmless fluid for drinking or any other purpose which the Sanitary Department in India for the first twenty years had, if judged by their action in this matter, practically maintained it to be. He himself and others had suffered not a little for their persistence in trying to remove this removable cause of cholera extension, but with little success, and not a little injury to prospects; it was now a consolation to feel they had suffered for what the profession and Europe was prepared to endorse was the right thing to have done. Though there was no specific medicine for cholera, yet there was ample room for treatment in its relation to nursing; this was the sheet anchor, not drugging by opium or stimulating by alcohol.

Dr. J. Wright Mason stated that, in accordance with the cholera regulations, the medical officer of health had to satisfy himself as to the destination of persons arriving on board ship, and could detain only such persons not giving a satisfactory address. He had issued instructions to masters of ships arriving at the port of Hull, containing particulars of the regulations issued by the Local Government Board. The jurisdiction of port sanitary authorities should be strictly defined. Cases, if imported along the coast line, must be dealt with in whose jurisdiction it occurred.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

Tenth Report of the Committee to the Members for the Year ending June 30th, 1893.

Gentlemen,—In presenting to you the tenth report of the proceedings of the Society for the year ending June 30th, 1893, your Committee have again the pleasure of congratulating you upon the success which has been achieved. The sound financial position which the Society has attained is shown clearly in the accompanying accounts, and it is a source of great satisfaction to us to feel that such accounts, showing the results of nearly ten years' working experience, leave no room for doubt that our business was founded upon a perfectly secure basis, and that the method in which it has been conducted is economical and safe. It is, however, with still greater satisfaction that we are able to inform you that we are constantly receiving evidence that the money which we pay away is doing the work it was intended to do, and that the value of the benefits which the Society confers upon those of its members who are entitled to them is even greater than was at first anticipated.

Numerical Progress.—During the year no fewer than 163 new proposals for membership were received, of which 145 were accepted and completed. This is considerably above the average number received during the last few years, and affords gratifying evidence that the benefits of the Society are becoming better known to the members of the profession. Of these proposals it was found necessary to decline 15 only, and as only those in perfect health are accepted, it is evident that the proposals were received from an excellent class of lives. In fact, the preliminary forms required to be filled up before a new membership can be entertained are so drawn as to make it difficult that any really bad lives shall be offered. The net number of new memberships is, therefore, 145, and this, added to the number of members at the beginning of the year under review, makes a total of 1,377. On the other hand, 50 memberships have during the year fallen through from various causes—namely, 38 have lapsed by the non-payment of the subscription, 3 members have withdrawn after having received a consideration for their certificates in the shape of a cash surrender value, and 9 have died. In this latter number was 1 member who, actuated by the generous desire to avoid coming upon the funds of the Society until compelled to do so, struggled, it is feared, against his disease too long, and died within a fortnight of his declaring on the Sick Benefit Fund. The net result is that the present number of members is 1,327, showing an increase of 95 on the number at the beginning of the year.

Financial Statement.—The accounts (appended to the Report) will be found to show the very sound condition of the finances of the Society. The corresponding figures of the accounts of the previous year are placed at the side of the amounts for this year, so that a comparison between them is rendered easy. It will be seen that each department of the Society's business shows a large increase during the year.

Circumstances having arisen which render it difficult to ascertain the exact value of the investment of £2,000 made by the Society in the bonds of the South Staffordshire Mines Drainage Commissioners, the Committee have resolved to write off the whole amount, placing it in a suspense account until a favourable opportunity of realising occurs. As is shown in the accounts, the amount is replaced from the savings in the management fund.

Sickness and Accident Fund.—This is by far the most important branch of the business, as the Society was founded principally with the view to assure against losses occasioned by disabling illness. The outgo in this department is necessarily very fluctuating in amount, and for the last three years has been materially affected by the epidemic of influenza. The following statement shows the amount paid away as sickness benefit in each quarter during the last five years:—

Year.	Members.	First Quarter, ending September 30th.	Second Quarter, ending December 31st.	Third Quarter, ending March 31st.	Fourth Quarter, ending June 30th.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888-89	985	390 9 0	545 2 0	560 6 6	650 6 6
1889-90	1,067	504 13 6	631 10 0	1,194 16 6	541 17 6
1890-91	1,145	607 8 6	642 9 0	825 13 6	1,184 0 6
1891-92	1,232	780 13 6	708 1 6	1,190 0 6	1,044 15 0
1892-93	1,328	662 6 6	803 12 6	922 11 6	938 9 6

Although the influenza epidemic has largely subsided, it is responsible for 49 of our sickness claims during the last twelve months, and caused a total of 115 weeks 6 days' illness, at a cost to the Society of £443 2s., showing an average duration of illness of 2 weeks 2 days. In the previous year the sick claims arising from influenza were 123 for 245 weeks 2 days, and caused an expenditure of £891, showing an average duration of illness of 2 weeks. We are justified, therefore, in hoping that for the present we have seen the worst of this scourge.

The rules of the Society as to the supervision of the admission of new members are so strict and so rigidly adhered to that, during the first few years of its operations, the fact that the sickness expenditure was less than that provided by the tables was not surprising; but the Society is now in its tenth year of work, and it is gratifying to find that, although in the case of the bulk of its members what is known as the advantage of medical selection must have almost if not entirely ceased, yet the sick claims are within the amount provided for.

The total number of sickness and accident claims during the year under review was 227 for 1,057 weeks 6 days, being